

In the Claims:

1 1. (Currently Amended) A method for blending images into a single
2 image, comprising:

3 selecting two images having overlapping content;

4 dividing the two images into strips ~~along a common plane wherein each~~
5 ~~strip is a long and narrow piece of the image;~~

6 selecting a strip ~~of uniform width~~ in each of the two images where the
7 two images overlap each other;

8 determining differences between the overlapping two strips;

9 determining a line through the overlapping strips where the differences
10 between the overlapping strips are minimized; and

11 blending the two images together along the minimized line to create a
12 single image.

1 2. (Original) The method according to claim 1, wherein the selected
2 images belong to a set of two or more images comprising a scene.

1 3. (Original) The method according to claim 1, wherein the selected
2 images differ from each other based on at least recording time, camera location,
3 camera setting, lighting, shadows, and/or background.

1 4. (Canceled).

1 5. (Original) The method according to claim 1, wherein the selected
2 images are divided along a common plane.

1 6. (Original) The method according to claim 1, wherein the selected
2 images are divided into strips along one of a vertical plane or a horizontal plane.

1 7. (Original) The method according to claim 1, wherein the two
2 overlapping strips are selected according to a mean squared difference algorithm

3 such that the sum of the mean squared difference values between the two
4 selected strips is minimized.

1 8. (Original) The method according to claim 1, including:
2 cutting the selected images along the minimized line; and
3 joining the cut images together to create the single image of the scene.

1 9. (Original) The method according to claim 1, including:
2 calculating a squared color difference value for each pixel pair between
3 the overlapping strips;
4 converting the squared color difference values into a gray scale image of
5 the overlapping strips, wherein the brightest pixels in the gray scale image
6 correspond to the pixels of greatest difference between the two overlapping
7 strips;
8 sorting the gray scale pixels from largest to smallest difference value;
9 for each sorted gray scale pixel, mapping the gray scale pixel to one of
10 two regions within the overlapping strip according to the adjacency of the gray
11 scale pixel to the one of the two regions;
12 determining a cut line between the two regions;
13 cutting each selected image along the cut line within the overlapping strip
14 of each selected image; and
15 combining the two cut selected images along the cut line to form the
16 single image.

1 10. (Original) The method according to claim 9, wherein the cut line is
2 determined between a first region and a second region to which the pixels have
3 been mapped.

1 11. (Original) The method according to claim 9, wherein the cut line
2 corresponds to the line of best match between the overlapping strips.

1 12. (Original) The method according to claim 9, wherein at least one of
2 the cut images is warped along the cut line to improve the fit between the two
3 cut images along the cut line.

1 13. (Original) The method according to claim 12, wherein a Gaussian
2 function is used to warp the at least one cut image.

1 14. (Original) The method according to claim 1, wherein the blending
2 of images is performed iteratively, with the blended single image being utilized
3 as one of the selected two images to be blended.

1 15. (Original) The method according to claim 14, wherein the method
2 of blending is performed iteratively until all images comprising the scene have
3 been blended into a final single image of the scene.

1 16. (Currently Amended) A method for blending two images into a
2 single image, comprising:
3 dividing two images into strips along a common plane ~~wherein each strip~~
4 ~~is a long and narrow piece of the image;~~
5 selecting a strip ~~of uniform width~~ in each image where the two images
6 overlap, wherein the selecting comprises selecting the overlapping strips which
7 have reduced error between the selected overlapping strips compared with non-
8 selected overlapping strips of the two images;
9 determining a line through the selected overlapping strips where
10 differences between the selected overlapping strips are minimized;
11 blending the two images along the determined minimized line to create a
12 single image; and
13 warping the single image to minimize blurring along the blending line.

1 17. (Currently Amended) The method according to claim 16, wherein
2 the minimized line is determined by calculating mean squared difference values
3 for pairs of pixels between the two selected overlapping image strips.

1 18. (Currently Amended) The method according to claim 16, wherein
2 at least one of the images is warped where the differences between the selected
3 overlapping strips along the blending line exceed a predetermined threshold.

1 19. (Original) The method according to claim 16, wherein the single
2 image is warped by application of a Gaussian function.

1 20. (Original) The method according to claim 19, where the Gaussian
2 function is applied iteratively along a plurality of planes and with a plurality of
3 magnitudes of warp to determine the best fit between the images.

1 21. (Currently Amended) A computer-based system for blending
2 images into a single image, comprising:

3 a computer configured to:

4 divide two images having overlapping content into strips along a common
5 plane wherein each strip is a long and narrow piece of the image having one
6 dimension which is greater than another dimension of the respective strip;

7 select a strip of uniform width in each of the two images where the two
8 images overlap each other;

9 determine pixel difference values between the overlapping two strips;

10 determine a line through the overlapping strips where the sum of the pixel
11 difference values between the overlapping strips are minimized; and

12 blend the two images together along the minimized line to create a single
13 image.

1 22. (Original) The system according to claim 21, wherein the two
2 overlapping strips are selected according to a mean squared difference algorithm
3 such that the sum of the mean squared difference values between the two strips
4 is minimized.

1 23. (Original) The system according to claim 21, wherein the
2 computer is configured to:

3 calculate a squared color difference value for each pixel pair between
4 the overlapping strips;

5 convert the squared color difference values into a gray scale image of the
6 overlapping strips, wherein the brightest pixels in the gray scale image
7 correspond to the pixels of greatest difference between the two overlapping
8 strips;

9 sort the gray scale pixels from largest to smallest difference value;

10 for each sorted gray scale pixel, map the gray scale pixel to one of two
11 regions within the overlapping strip according to the adjacency of the sort gray
12 scale pixel to the one of the two regions;

13 determine a cut line between the two regions;

14 cut each image along the cut line of the overlapping strip of each image;

15 and

16 combine the two cut images along the cut line to form the single image.

1 24. (Original) The system according to claim 23, wherein the cut line
2 is determined by calculating mean squared difference values for pairs of pixels
3 between the two selected image strips.

1 25. (Original) The system according to claim 23, wherein at least one
2 of the images is warped where the differences between the selected strips along
3 the cut line exceed a predetermined threshold.

1 26. (Currently Amended) A system for blending images into a single
2 image, comprising:

3 means for dividing two images having overlapping content into strips
4 along a common plane in at least one region of overlap wherein each strip is a
5 long and narrow piece of the image having one dimension which is greater than
6 another dimension of the respective strip;

7 means for calculating difference values between the image data content
8 of respective pixels of the two images in corresponding strips of uniform length

9 in the at least one region of overlap;

10 means for determining a cut line through the two images where the
11 difference values are minimized; and

12 means for blending the two images along the cut line to create a blended
13 single image.

1 27. (Currently Amended) A system for blending images into a single
2 image, comprising:

3 a first computing module dividing two images having overlapping content
4 into strips along a common plane in at least one region of overlap ~~wherein each~~
5 ~~strip is a long and narrow piece of the image;~~

6 a second computing module calculating difference values between the
7 pixels of the two images ~~in corresponding strips of uniform width~~ in the at least
8 one region of overlap, wherein the difference values individually correspond to a
9 difference of image data content between a pair of corresponding pixels of the
10 two images;

11 a third computing module determining a cut line through the two images
12 where the difference values are minimized; and

13 a fourth computing module blending the two images along the cut line to
14 create a blended single image.

1 28. (Original) The system according to claim 27, including selecting
2 two overlapping strips according to a mean squared difference algorithm such
3 that the sum of the mean squared difference values between the two strips is
4 minimized.

1 29. (Original) The system according to claim 27, including:

2 a fifth computing module cutting the two images along the cut line; and

3 a sixth computing module joining the cut images together to create the
4 single image.

1 30. (Original) The system according to claim 29, wherein at least one
2 of the cut images is warped along the cut line to improve the fit between the
3 two images along the cut line.

1 31. (Original) The system according to claim 27, wherein the blending
2 of images is performed iteratively, with the blended single image being utilized
3 as one of the two images to be blended.

1 32. (Original) The system according to claim 27, wherein the system is
2 included in one of a video camera or a digital camera.

1 33. (Currently Amended) A computer readable medium ~~encoded with~~
2 storing software for blending images into a single image, wherein the software is
3 provided for:
4 selecting two images having overlapping content;
5 dividing the two images into strips along a common plane where the two
6 images overlap each other;
7 selecting a strip in each of the two images;
8 determining the differences between the overlapping two strips;
9 determining a line through the overlapping strips where the differences
10 between the overlapping strips are minimized; and
11 blending the two images together along the minimized line to create a
12 single image.

1 34. (Original) The software according to claim 33, wherein the selected
2 images differ from each other based on at least recording time, camera location,
3 camera setting, lighting, shadows, and/or background.

1 35. (Original) The software according to claim 33, wherein the two
2 overlapping strips are selected according to a mean squared difference algorithm
3 such that the sum of the mean squared difference values between the two strips
4 is minimized.

1 36. (Original) The software according to claim 33, wherein the
2 software is provided for:

3 calculating a difference value for each pixel pair between the two
4 overlapping strips;

5 converting the calculated difference values into a gray scale image of the
6 overlapping strips, wherein the brightest pixels in the gray scale image
7 correspond to the pixels of greatest difference between the two overlapping
8 strips;

9 sorting the gray scale pixels from largest to smallest difference value;

10 for each sorted gray scale pixel, mapping the gray scale pixel to a first
11 region or a second region within the overlapping strip according to the adjacency
12 of the gray scale pixel to the first region or the second region;

13 determining a cut line within the overlapping strips between the first
14 mapped region and the second mapped region;

15 cutting each selected image along the cut line of the overlapping strip of
16 each selected image; and

17 combining the two cut selected images along the cut line to form the
18 single image.

1 37. (New) The method according to claim 1, wherein the selecting
2 comprises selecting the strips of the two images which provide reduced error
3 between the selected overlapping two strips compared with non-selected strips
4 of the two images.

1 38. (New) The method according to claim 1, wherein the determining
2 differences comprises determining differences between image data content of
3 the overlapping two strips.

1 39. (New) The method according to claim 38 wherein the determining
2 differences between image data content comprises determining differences
3 between the image data content of one pixel of one of the overlapping two
4 strips and one pixel of another of the overlapping two strips and wherein the one
5 pixels of the one and the another of the overlapping two strips both correspond

6 to the same subject present in the two images.

1 40. (New) The method according to claim 38 wherein the determining
2 differences comprises determining differences between the image data content
3 comprising color space content of the overlapping two strips.

1 41. (New) The system according to claim 27, wherein the pairs of the
2 pixels individually correspond to the same subject present in the two images.